SONY

4-671-484-**11**(2)

AIT Drive

User's Guide

StorStation

AIT-3 TAPE DRIVE

AITi260

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- Gewerbegebiete
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(Diese Ausrüstung erfüllt die Bestimmungen der Norm EN55022, Klasse B.)

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주거지역에서는 물론 모든 지역에서 사용할 수 있습니다.

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AITi260 Tape Drive

The Sony AITi260 drive is a high capacity data storage device using Advanced Intelligent tape (AIT) technology. The AITi260 drive achieves high data reliability through Read-After-Write, an additional level of Error Correction Code, and other features.

The Sony AITi260 drive stores data on tape using a standard format called AIT (Advanced Intelligent Tape) and ALDC formats.

Introduction

Product Features

	AITi260
Data Capacity	100 GB uncompressed (with AIT-3 230 m tape) 260 GB compressed* (with AIT-3 230 m tape)
Transfer Rate (sustained)	12 MB/s uncompressed

* Assuming a 2.6 : 1 compression ratio.
(The compression ratio varies according to the type of data.)

- Supported Format : AIT-1, AIT-2, AIT-3
- Burst Transfer Rate
  - 12 MB/s Asynchronous
  - 160 MB/s Synchronous
- 18 MB Buffer Memory
- 3.5” Standard Height, 5.25” Half Height
- Embedded SCSI Interface
  Ultra 160 Wide LVD/SE SCSI
- Supports Variable or Fixed Record Length
- Supports SCSI Disconnection/Arbitration
- Frame Rewrite Function
- Three levels of Error Correction Code (ECC)
- High Speed search (120 times normal Read/Write speed of AIT-3 mode)
- Random Read, Append Write

Precautions

Installation

Avoid placing the drive in a location subject to:

– high humidity

– high temperature

– mechanical shock and vibration

– direct sunlight

Operation

- Do not move the drive while it is operating. It may cause malfunction.
- Avoid exposing the drive to sudden changes from a low to high in temperature. This may cause water condensation to collect inside the drive. If the ambient temperature should suddenly rise while the drive is turned on , wait at least one hour before turning on the drive. If you attempt to operate the drive immediately after a sudden increase in temperature, a malfunction may occur.
- Turning off the power to the drive while it is writing to tape may cause the tape to become unreadable. All previously negotiated parameters will be lost, whenever power to the drive is cycled.
- Upon execution of the hardware reset hole, the driver will be reset and there is a risk of lost and unreadable data. Thus, please do not use the hole other than repair purposes. (See page 13)

Transportation

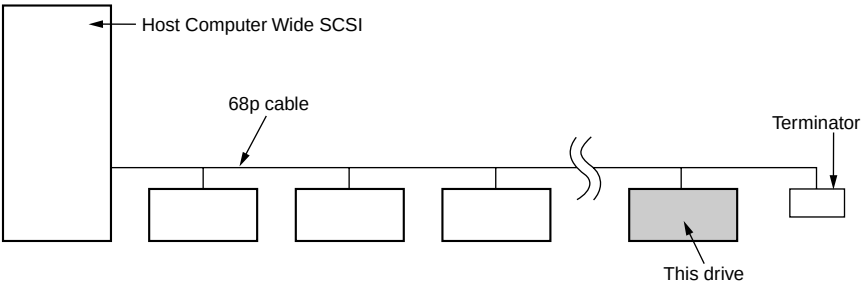
- Keep the original packing materials to facilitate transportation of the drive.
- Always remove the tape before moving the drive. After removing the drive from the computer, repack the drive into its original packing.

Notice of SCSI Termination

The AITi260 conform to the Microsoft PC97 standard which requires the internal (naked) drive to be terminated with an external terminator.

Microsoft PC97 SCSI requirements

SCSI peripherals must not terminate the bus. Both internal and external cable ends are instead terminated by plug-in connectors.



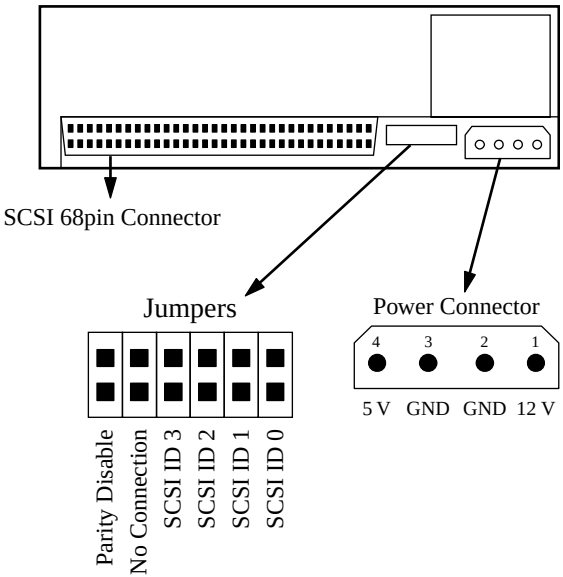
Example of SCSI set-up

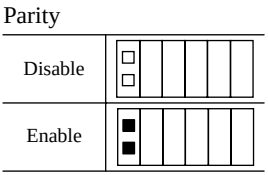
Installation

SCSI Connection/Setting the SCSI ID

SCSI ID

SCSI ID	P.D.	N.C.	3	2	1	0
0			■	■	■	■
1			■	■	■	□
2			■	■	□	■
3			■	■	□	□
4			■	□	■	■
5			■	□	■	□
6			■	□	□	■
7			■	□	□	□
8			□	■	■	■
9			□	■	■	□
10			□	■	□	■
11			□	■	□	□
12			□	□	■	■
13			□	□	■	□
14			□	□	□	■
15			□	□	□	□





Note : ▣ = CLOSED/Jumper

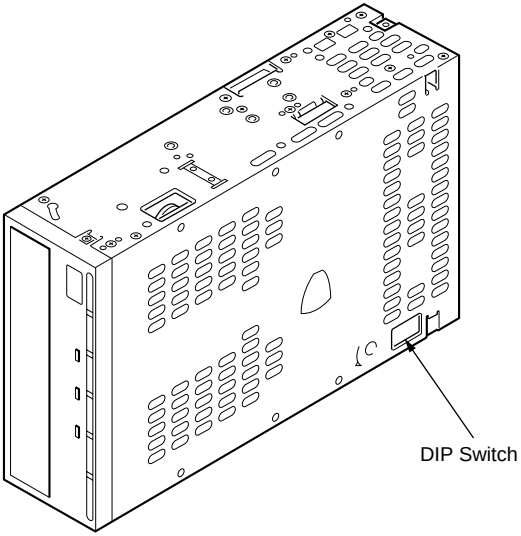
■ = OPEN/Jumper not installed

□ Don't care

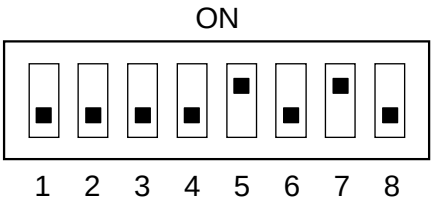
Parity Disable Jumper

Parity check function can be disabled by Jumper. Parity check is disabled while left end jumper is installed. Parity generate function is always enabled.

Option Switches (DIP Switch)



DIP Switch Positions



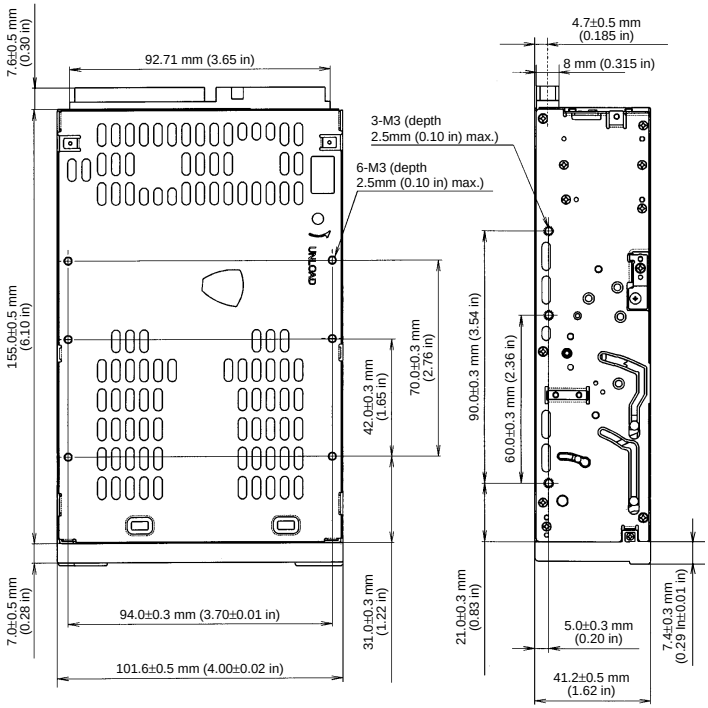
1 Reserved (OFF)
2 Reserved (OFF)
3 Reserved (OFF)
4 Reserved (OFF)
5 Terminator Power (ON)
6 Reserved (OFF)
7 DC Control (1) (ON)
8 DC Control (2) (OFF)

Data Compression Control DIP switch

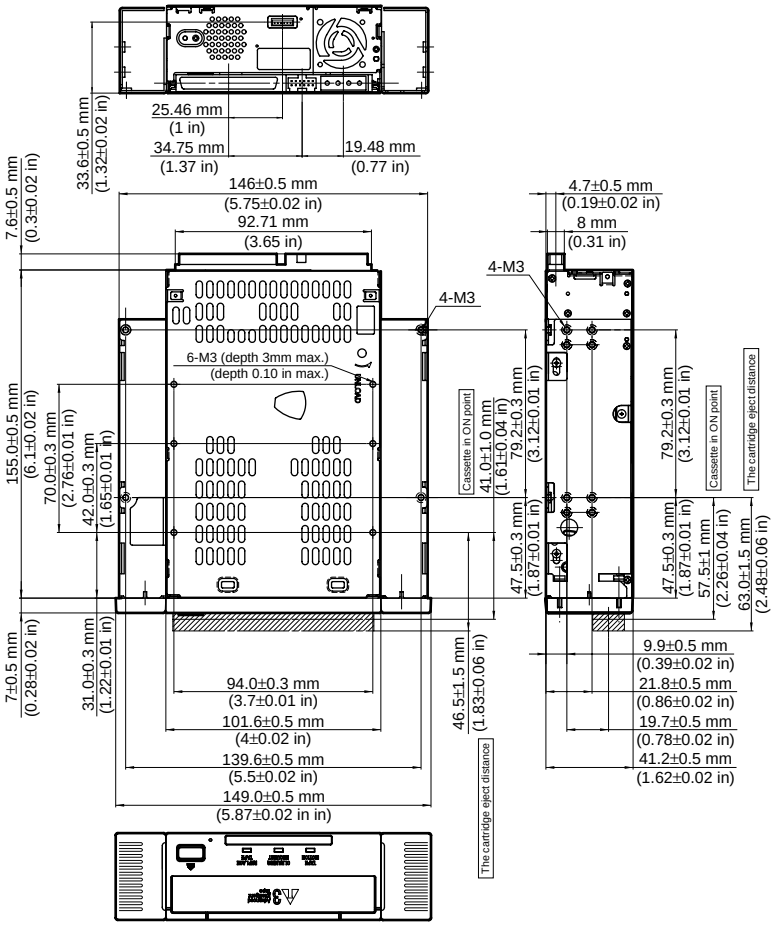
Data compression can be selected by DIP switches. Data compression is enabled while position 7 [DC Control (1)] is ON. Control by host can be disabled when position 8 [DC Control (2)] is ON.

Mounting Holes

For 3.5" Standard Height



For 5.25" Half Height

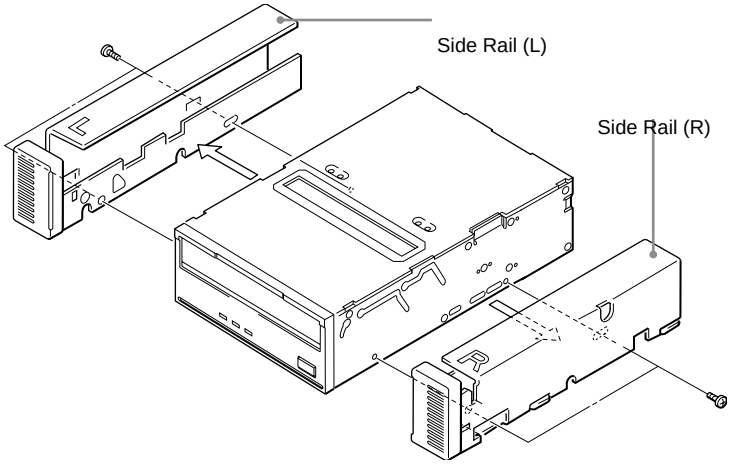


Remodeling from 5.25" Model to 3.5" Model

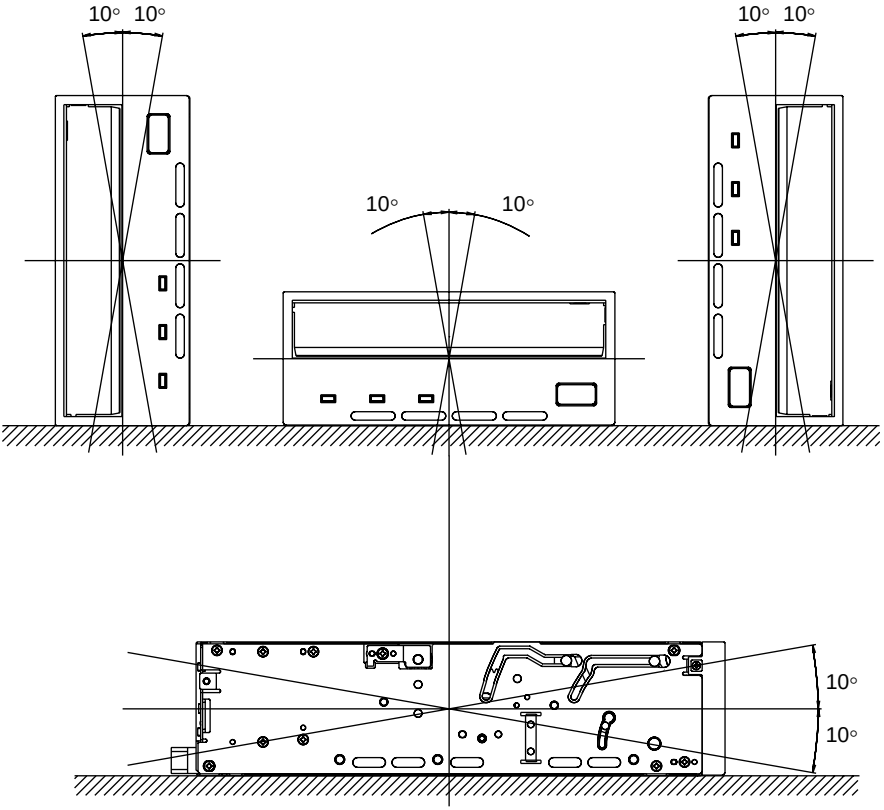
You can remodel the 5.25" model to the 3.5" model yourself.

1 Remove the 2 screws for each side rail.

2 Take the side rail off.



Orientation

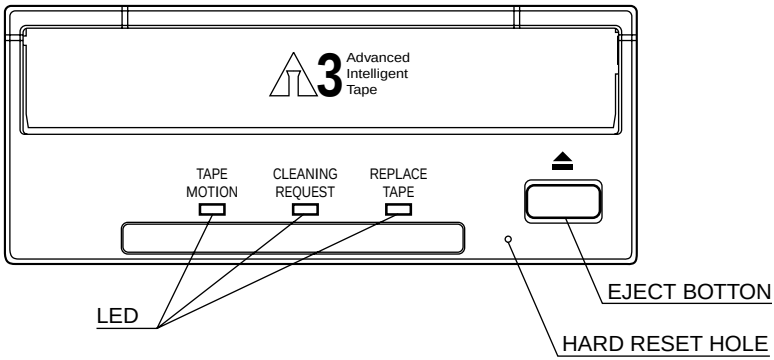


Operation

Location of 3 LEDs

There are three LED indications (Tape Motion, Cleaning Request, Replace Tape) and an EJECT button on the front panel of the unit.

Front Panel (for 3.5" Standard Height)



LED Indication for Drive Status

The LED indicators are defined as follows

LED			
Tape Motion	Cleaning Request	Replace Tape	Sense
A	Independent	Independent	Tape Loaded
B	Independent	Independent	Tape Access in Progress (write/read)
C	Independent	Independent	Tape Access in Progress (others)
Independent	A	Independent	Cleaning is requested
Independent	B	Independent	Cleaning is Not Completed
Independent	Independent	A	Media Error Occurred
C	C	C	H/W Error Occurred

A: On

B: Slow (0.9 sec on/0.3 sec off)

C: Fast (0.3 sec on/0.3 sec off)

Drive Operation

Loading a Cassette

Insert a cassette into the slot on the front panel with the arrow on the cassette pointing towards the drive. As the cassette is inserted, the drive takes it and automatically loads it into drive mechanism.

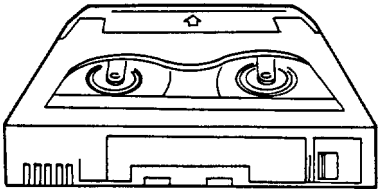
Unloading a Cassette

The cassette can be removed from the AITi260 either in response to a SCSI Unload Command, or by pressing the eject bottom.

By pressing Eject button, the tape goes to BOT, the drive unthreads it, and ejects the cassette from the slot.

Write-protecting a Cassette

Cassettes can be write-protected by sliding the tab on the back of the cassette. In this state, data can be read from the tape but not written onto it.



AIT-1 AIT-2, 3

Using your fingernail, push the switch in the direction of the arrow to protect the tape from writing or accidental erasure.

Return the switch to its original position to re-enable writing.

Using a Cleaning Tape

In case of AITi260 series, a cleaning function is built into the drive and hence the use of a c leaning cartridge is not needed. If however the drive experiences excessive errors, the use of a cleaning cartridge is recommended.

Emergency Cassette Removal Procedure

In case the tape is stuck inside the drive, you could remove the tape cartridge manually.

1 Remove the drive from the chassis or enclosure to allow access to the bottom and right side of the drive.

2 Remove the drive's top cover.

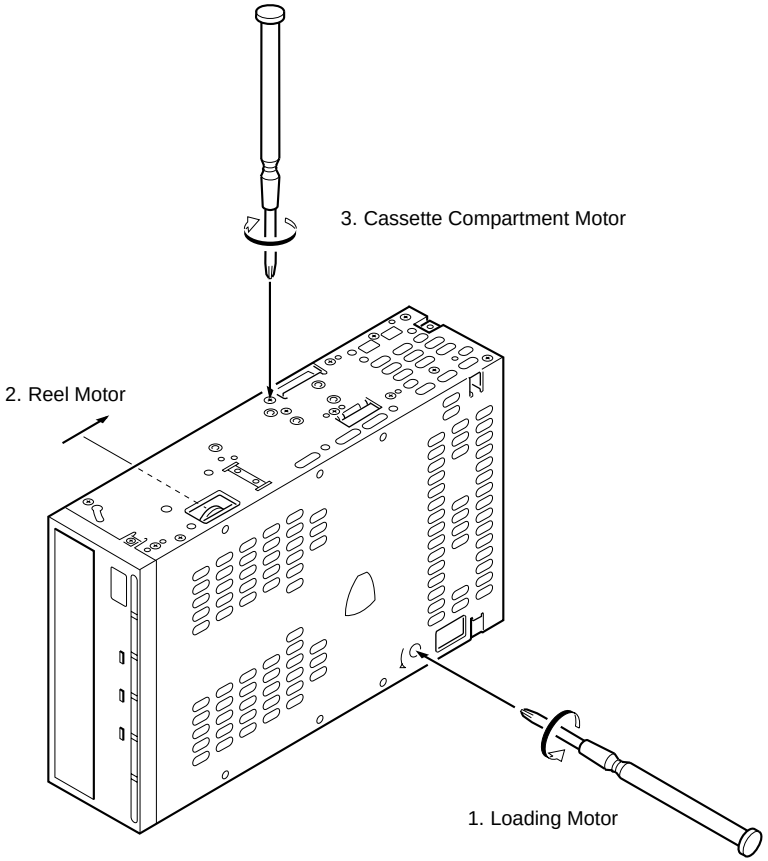
3 Locate the small opening in the bottom of the drive and insert the tip of a precision screwdriver so that the Threading motor shaft can be rotated.

4 Rotate the motor shaft counterclockwise to bring the threading mechanism back to the initial position. (Refer to the photo-1 on page 17.)

5 Before manual eject procedure, tape slack must be removed in order to prevent tape damage. Press and rotate the gear mechanism located on the right side of the drive clockwise to tighten the tape.

6 After the tape slack has been removed, turn the screw located on the right side of the drive clockwise by a precision screwdriver until the tape cartridge is lifted out of the drive mechanism and is ejected.

7 Return the drive to Sony for repair.



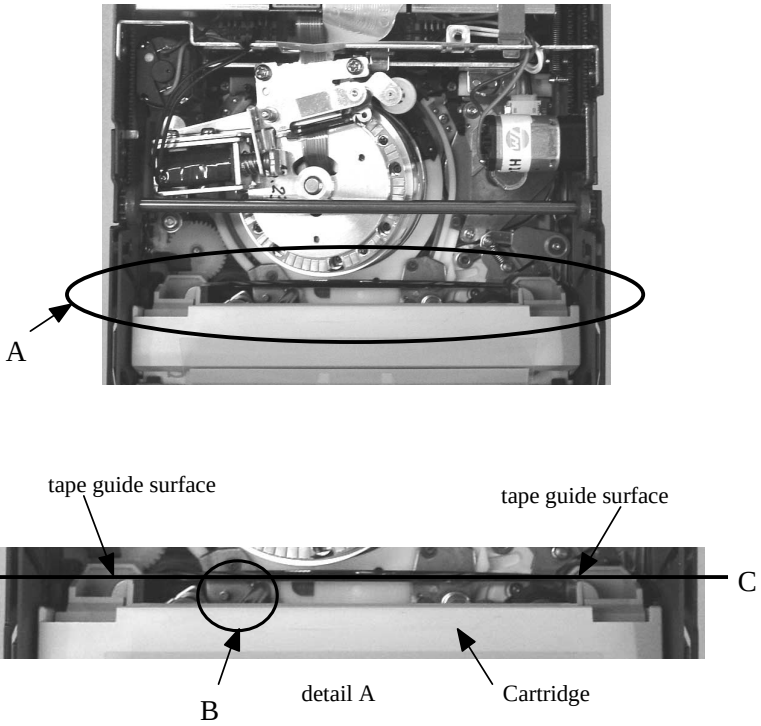


Photo-1: The Initial Position of the Threading Mechanism

Caution

Stop rotating the motor shaft immediately, when the guide B (see detail A of Photo-1) gets to the area below the line C-C (This line is defined by 2 circular tape guide surfaces of the cartridge). Otherwise the gear of the drive can be damaged.

Interface Implementation

Supported SCSI Messages

Abort
Bus Device Reset
Command Complete
Disconnect
Extended Message
– Synchronous Data Transfer Request
– Wide Data Transfer Request
Identify (w/&w/o Disconnect)
Ignore Wide Residue
Message Parity Error
Message Reject
No Operation
Restore Pointers
Save Data Pointer

Supported SCSI Commands

Erase
Inquiry
Load/Unload
Locate
Log Sense
Log Select
Mode Select
Mode Sense
Prevent Allow Medium Removal
Read
Read Block Limits
Read Buffer
Read Position
Receive Diagnostic Result
Release Unit
Report Density Support
Report Luns
Request Block Address
Request Sense
Reserve Unit
Rewind
Seek Block
Send Diagnostic
Space
Test Unit Ready
Verify
Write
Write Buffer
Write Filemarks

Specification

Product Specifications

Dimensions

	3.5"	5.25"
Height	41.2 mm (1.62 in)	41.2 mm (1.62 in)
Width	101.6 mm (4.0 in)	146 mm (5.75 in)
Depth	155.0 mm (6.1 in)	155 mm (6.1 in)

Altitude

Operating	0 to 10,000 feet

Vibration

Operating	Swept Sine 5 to 500 Hz *0.25 G Peak 1 Octave/min. 3 axes, 3 directions
Non-Operating	Swept Sine 5 to 500 Hz *0.5 G Peak 1 Octave/min. 3 axes, 3 directions

Acoustic Noise

(A) curve weight

Streaming Write/Read	35 db (A)
Insert/Eject	60 db (A)

Note

The sound-meter on (A) scale is located 1m in front of the center of the drive front panel.

Shock

Operating	No Data Loss Half Sine 5 G Peak 3 ms 3 axes, 3 directions *Interval 10 seconds
Non-Operating	No Device Damage Half Sine 90 G Peak 3 ms (30 G Peak 11 ms) 3 axes, 3 directions

Temperature and Humidity Range

Temperature

Operating	5 ˚C to 40 ˚C (ΔT<10 ˚C/h)
Non-Operating (mech.)	– 40 ˚C to 70 ˚C (ΔT<20 ˚C/h)
Non-Operating (tape)	– 40 ˚C to 45 ˚C (ΔT<20 ˚C/h)

Humidity

Operating	20 to 80% RH, non-condensing Maximum wet bulb temperature = 26 ˚C
Non-Operating (mech.)	5 to 95% RH (ΔT<30%/h)
Non-Operating (tape)	20 to 80% RH (ΔT<30%/h)

Power Requirements

Voltage	Max Ripple	Current	
		Typical	Maximum
5 V +/– 5 %	100 mVp-p	2.5 A	2.9 A
12 V +/– 10 %	150 mVp-p	0.4 A	2.0 A

Suspended Particulate

Operating	Less than 150 microgram/m^3 Based Sampling period 24 hours

ESD

Discharge Voltage	< 8 kV: No operation failure

Air-cooling Requirement

Surrounding temperature	< 40 ˚C

Clean air flow is recommended to minimize the possibility of data loss.

Third Party Support Contacts (In the USA)

Host Adapter Vendors	Phone Numbers
Adaptec	408-945-8600
ATTO	716-691-1999
Bus Logic	408-492-9090
DPT	407-830-5522
Future Domain	714-253-0400
Initio	408-988-1919
Qlogic	714-438-2200
Ultera Systems Inc.	714-367-8800

Operating Systems	Backup Software Vendors	Phone Numbers
DOS	Arcada	407-333-7500
	Cheyenne	516-484-5110
	Columbia Data Products	407-869-6700
	Corel	613-728-8200
	NovaStor	805-579-6700
	Palindrome	708-505-3300
	ST. Bernard Sofware	619-676-2277
	Sytron	508-898-0100
	Tapedisk	715-235-3388
Macintosh	Cheyenne	516-484-5110
	Corel	613-728-8200
	Dantz	510-253-3000
	NovaStor	805-579-6700
OS/2	Cheyenne	516-484-5110
	Corel	613-728-8200
	IBM	800-426-3333
	NovaStor	805-579-6700
	Sytron	407-333-7500
Windows	Arcada	407-333-7500
	Cheyenne	516-484-5110
	Corel	613-728-8200
	Creata	909-595-8811
	NovaStor	805-579-6700
	ST. Bernard Software	619-676-2277
	Sytron	508-898-0100
Windows NT	Arcada	407-333-7500
	Cheyenne	516-484-5110
	Creata	909-595-8811
	Microsoft	206-882-8080
	NovaStor	805-579-6700
	Avail Systems	303-444-4018
Windows NT Advanced Server	Microsoft	206-882-8080

* All phone numbers listed are in the USA.

  Add the country code (1) prior to those numbers when calling from outside the USA.

Operating Systems	Backup Software Vendors	Phone Numbers
Windows 95	NovaStor	805-579-6700
DEC Unix	Cheyenne	516-484-5110
	NovaStor	612-933-8790
	Software Moguls	612-933-8790
	Work Station Solutions	603-880-0080
SUN Unix	Legato	415-812-6000
	NovaStor	818-707-9900
	Software Moguls	612-933-8790
	Sun Soft	310-348-8649
	Work Station Solutions	603-880-0080
Solaris Unix	Cheyenne	516-484-3150
	Legato	415-812-6000
	NovaStor	818-707-9900
	Software Moguls	612-933-8790
	Sun Soft	310-348-8649
	Work Station Solutions	603-880-0080
SCO Unix	Cheyenne	516-484-3150
	Legato	415-812-6000
	Software Moguls	612-933-8790
	Work Station Solutions	603-880-0080
NCR Unix	NovaStor	818-707-9900
	Work Station Solutions	603-880-0080
HP Unix	Cheyenne	516-484-3150
	NovaStor	818-707-9900
	Work Station Solutions	603-880-0080
AIX Unix	Cheyenne	516-484-3150
	Legato	415-812-6000
	NovaStor	818-707-9900
	Software Moguls	612-933-8790
	Work Station Solutions	603-880-0080
Interactive Unix	Sun Soft	310-348-8649
SGI Unix	Software Moguls	612-933-8790
	Work Station Solutions	603-880-0080
Novell UNIXware	Novell	801-263-3500
Novell NLM	Arcada	407-263-3500
	Avail Systems	303-444-4018
	Cheyenne	516-484-3150
	Columbia Data Products	407-682-0265
	Creata	909-595-8811
	Legato	415-812-6000
	NovaStor	818-707-9900
	Novell	801-419-5544
	Palindrome	708-505-3300
	Performance Tech	210-979-2110
	ST. Bernard Software	619-676-2277
	Symantec	310-449-4156
	Sytron	508-898-0100
Banyan	Performance Tech	210-979-2110
Lantastic	NovaStor	818-707-9900
Amiga	Moonlighter	407-384-9484
RS6000	Legato	415-812-6000
	NovaStor	818-707-9900
	Software Moguls	612-933-8790

Sony Contacts

For further information, please contact:

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URL: http://sony.storagesupport.com/
E-mail: tape.support@am.sony.com

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Computer Peripherals Dept. Tape Streamer Section

Osaki Gate City East Tower, 1-11-1, Osaki
Shinagawa-ku, Tokyo, 141-0032 Japan
TEL: (81) 3-5435-3486 FAX: (81) 3-5435-3565

Sony of Canada Ltd., AV/IT Marketing Group
Computer Peripherals Product Marketing

115 Gordon Baker Road Toronto, Ontario, M2H 3R6 Canada
TEL: (416) 499-1414 or (1) 800-961-7669
FAX: (416) 499-8541

Sony Computer Peripherals & Compornents Europe

URL: http://www.sonyisstorage.com/

Electronics Devices Marketing (Singapore)
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Enterprise Storage Solutions Dept.

2 International Business Park, #01-10 Tower One,
The Strategy, Singapore 609930
TEL:65-6544-8000 FAX:65-6544-7390

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URL: http://www.sony.com.cn

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TEL: 86-21-6841-3222 FAX: 86-21-6841-0280

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TEL: (55) 11-3824-6586 to 6598 FAX: (55) 11-3611-9064
URL: http://www.sonybrasil.com

Sony Australia Ltd., Information Technology Products Division

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TEL: 1800-226-429 FAX: (61) 2-9870-8564 A.C.N. 001 215 354
URL: http://www.sony.com.au/home.asp
E-mail: informatica@ssp.br.sony.com

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Av. Kennedy 8017, Las Condes, Santiago, Chile
TEL: (02) 210-6000 FAX: (02) 210-5417

Sony Taiwan Limited
Optical Devices Storage Dept. Data Storage Section

5F, 145 Changchun Road, Taipei 104, Taiwan
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Kangnam-Ku, Seoul, 135-798, Korea
TEL: 82-2-6001-4249 FAX: 82-2-6001-4115
URL: http://www.sony.co.kr/cp/

Sony Gulf FZE Computer Display & Peripheral Div.

P.O.BOX 16871, Jebel Ali, Dubai, U.A.E.
TEL: 971-4-8815488 or 8816912 FAX: 971-4-8817210 or 8816259

Sony Marketing of Japan

Business Solution Dept. Server Solution Marketing Section
URL: http://www.sony.co.jp/STORAGE